

Concise explanation of documents

JP-A-56-139667

The Mg content of an aluminum alloy disclosed in JP-A-56-139667 is 1 to 3 % (Claims). On the contrary, the Mg content of an aluminum alloy in the present invention is 0.2 to 0.8 wt%. Accordingly, the aluminum alloy composition defined in the present invention is different from that of JP-A-56-139667, in the light of Mg content.

Further, the present invention relates to an aluminum sheet material for automobile performing specific properties, and thus this sheet material differs from a semi-finished rolled product that is indefinite for a specific properties in the reference.

In detail in the present invention, when the contents of alloying elements are in the ranges as defined in the present invention, the aluminum alloy attains excellent spot weldability with maintaining mechanical strength and bending property, owing to a joint function of Zn, Cu, Mg, Si, Mn and the like.

Further, JP-A-56-139667 discloses only a general description directing to an extremely broad range of use including a material for buildings, a material for vehicles, or the like (see line 11 to line 13 at the right upper column

on page 4), and it never describes nor suggests any indispensable property for a specific use in the present invention.

**JP-A-9-256095**

The amounts of Si, Mg, Zn, Cu, and Fe in the present invention may be similar to those of JP-A-9-256095, but Mn range defined in the present invention is outside the range defined in the invention of JP-A-9-256095. JP-A-9-256095 describes that Mn is added in the range of from more than 0.6 wt% to 1.5 wt% or less, for the purpose of increasing mechanical strength, but addition of Mn under 0.6 wt% deteriorates the mechanical strength. However, according to the present invention, even if the amount of Mn is added lower than 0.6 wt%, an alloy having excellent mechanical strength can be obtained.

**JP-A-9-249949**

The Si content of an aluminum alloy disclosed in JP-A-9-249949 is 8.0 to 13.5 wt% (Claim 1), but that in the present invention is 2.6 to 5 wt%. Accordingly, the aluminum alloy composition defined in the present invention is different from that of the invention disclosed in JP-A-9-249949, in the light

of the Si content.

In addition, the product disclosed in the cited reference JP-A-9-249949 is an aluminum extruded material forged product. Accordingly, the present invention, whose final product is an aluminum sheet material for automobile, is clearly distinct from that of the cited reference JP-A-9-249949.

Accordingly it is apparent that the cited reference JP-A-9-249949 shows no consideration about an aluminum alloy having bending property along with mechanical strength, and further being improved in weldability.

#### **JP-A-4-32532**

The Si content of an aluminum alloy disclosed in JP-A-4-32532 is 0.3 to 2.5 wt% (Claims), but that of the present invention is 2.6 to 5 wt%. Accordingly, the aluminum alloy composition defined in the present invention is different from that of the invention disclosed in JP-A-4-32532, in the light of the Si content.

In addition, an object of the cited reference JP-A-4-32532 is to provide an aluminum alloy sheet for zinc phosphate treatment suitable as a material for surface treatment, but that of the present invention is to provide an aluminum sheet material for automobile. Accordingly, the present invention essentially differs from the invention disclosed in JP-A-

4-32532, in the light of the object.

However, this reference does not give any hints for the effects of the present invention (that is, for example, to maintain mechanical strength and bending property, and to enhance spot weldability).

**JP-A-9-143605**

The Si content of an aluminum alloy disclosed in JP-A-9-143605 is 0.6 to 1.0 wt% (Claims), but that of the present invention is 2.6 to 5 wt%. Accordingly, the aluminum alloy composition in the present invention is different from that of the invention disclosed in JP-A-9-143605, in the light of the Si content.

In addition, the product aimed at in the cited reference JP-A-9-143605 is a casting, a high pressure cast aluminum alloy for automobile wheel disk. Accordingly, it fails to give any hints to the present invention, whose final product is an aluminum sheet material for automobile showing excellent properties.

Excerpted English Translation of Notice of Reasons for  
Rejection

Ref. No. 970928

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(Heisei 14)

Notice of Reasons for Rejection

Patent Application No.	10-133918
Drafted Date	April 12, 2002 (Heisei 14)
Examiner:	Takeshi OGAWA 9270 4K00
Attorney for Applicant	Toshizo IIDA
Applied Articles:	Article 29, Clause 1, Article 29, Clause 2, and Article 36 of the Patent Law

This application is recognized to be rejected because of the following reasons. A statutory period for response to this action is set to expire 60 days from the mailing date of this notice.

Reasons

Reason (A) The inventions set forth in the following claims of this application are rejected according to Article 29, Clause 1, Item 3 of the Patent Law, since the inventions were described in the publication listed below which was distributed in Japan or foreign countries prior to the filing date of the application for patent.

Reason (B) The inventions set forth in the following claims of this application are rejected according to Article 29, Clause 2 of the Patent Law, since they could have easily been made by persons having ordinal knowledge in the technical field to which the inventions pertain, on the basis of the inventions described in the publication listed below which was distributed in Japan or foreign countries prior to the filing of the subject application.

Reason (C) This application does not satisfy the requirements stipulated in Article 36, Clause 4 and Clause 6 of the Patent Law, since the descriptions in the specification and drawings are deficient as explained in the following notes 1 and 2.

- Claim 1
- Reason (A)
- Cited Reference(s) 1
- Remarks:

Because limitations of Pb, Bi and Sn in the cited

reference 1 define them as impurities (see Claims), these elements correspond to unavoidable impurities in this application. Therefore, the cited reference 1 describes: use of the aluminum alloy (see Example 1 of the cited reference 1) that overlaps with this invention in view of the composition, except for an amount of Mn, as sheet materials for automobile (see line 12 at the right upper column on page 4 in the cited reference 1); and to make the aluminum alloy contain 1 % or less of Mn (see Claims in the cited reference 1), which element is known to contribute to improving strength of the alloy (see [0008] in the cited reference 2). Thus, there is substantially mentioned a sheet material for automobile, wherein is increased the amount of Mn in Example 1 in the cited reference 1.

- Reason (B)
- the cited reference(s) 1 to 5
- Remarks:

It is known to set the addition amount of zinc in aluminum alloy to the range of about 0.4 to 1.2 %, as an allowable amount when use scraps (see [0007] in the cited reference 3), for improving treating property before applying coating (see lines 1 to 10 at the right upper column on page 3 in the cited reference 4), and for

preventing a bad influence on weldability (see [0016] in the cited reference 5). Thus, based on suggestions in the cited references 3 to 5, a person skilled in the art can demonstrate ordinary creativity whereby he or she can decide a preferable and suitable amount of zinc when preparing the sheet material for automobiles described in the cited reference 1 with using scraps, when applying coatings on the material, or when welding the material.

And then, with respect to the improvement of weldability by addition of zinc as defined in [0006] of the present application, it is uncertain whether the object is achieved or not. That is, the effect of the addition of zinc is unobvious (see Remarks 2, Reason (c)). Accordingly, the effect of the invention in this application is not recognized to be particularly distinctive.

- Claim 2
- Reason (A)
- the cited reference(s) 1
- Reason (B)
- the cited reference(s) 1 to 5
- Remarks:

The cited reference 1 also describes use of scraps as raw materials (see Claims).



- Reason (C)

1. It is unknown whether "the aluminum sheet material for automobiles" used in claims 1 and 2 means only an automotive body panel material said in [0003], or includes a brazing "sheet" for a heat exchanger of an "automobile", and the like. That is, the description is a multivocal one whereby the conceptional range of the invention is unclear.

2. It is unknown by what means the invention achieves to the object of obtaining the weldability equal to or more than that of 6000-group alloy, which object is described in [0003] of this application. Accordingly, the object and means to achieve the same in the invention claimed in Claims are not understandable. Thus, the detailed description of the invention is not described in accordance with the ministerial ordinance by Ministry of Economy, Trade and Industry.

[0006] of this application describes the object is achieved by addition of 0.4 to 1.5 % of zinc. However, there is no description supported technically by working examples and so on in the specification, except that Table 2 describes weldability was deteriorated in Alloy F, even though Alloy F had an amount of zinc more than that of Alloy C having the similar composition. Further,

improvement in weldability by addition of zinc is not a common general technical knowledge known by a person skilled in the art. Thus, the description of [0006] alone provides no information whether the object of obtaining weldability equal to or more than that of 6000-group alloy is achieved or not, even if addition of zinc does change weldability.

A list of the cited reference(s)

1. JP-A-56-139667
2. JP-A-09-256095
3. JP-A-09-249949
4. JP-A-04-032532
5. JP-A-09-143605

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Record of the result of prior art search

· Technical field to be searched      IPC Int. Cl(7)  
C22C 21/00-21/18

This record is not a component of the reason for rejection.

(omitted)